

2000/04

**BALLARAT
AMATEUR
RADIO
GROUP INC.**

NEWSLETTER

P.O. BOX 1261
Mail Centre
Ballarat
VIC. 3354

APRIL 2000
VOLUME 23 No. 4

Official Newsletter of the Ballarat Amateur Radio Group Inc. No. 6953T



VK3BML



2 2000/104

BALLARAT AMATEUR RADIO GROUP INC.

Inc. No: 6953T
OF
OFFICE BEARERS - 1999 / 2000



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VK3AXH IAN MC.DONALD
VK3WN KEVIN HUGHES
exVK3AQM PHIL SNEDDON

REPEATERS

VK3RBA (Voice) 146.750 MHz. - Mt.Buninyong.
VK 3RPC (Packet) 144.750 MHz. - Mt.Warrenheip.
VK3RBU (Voice) 438.475 MHz. - Mt.Hollowback.
VK3RMB (Beacon) 432.535 MHz. - Mt.Buninyong.
VK3RBV (ATV) 426.250 MHz. - Ballarat

ACTIVITIES CLUB NET: Thursday nights at 8 pm. (8.30 pm during Daylight Saving). Freq: 3.610 MHz +/- QRM.

2 METRE SCRAMBLE: Sunday Nights at 7.50 pm. Freq: 146.425 to 146.600 MHz. Inc.

Call back held on VK3RBA 146.750 MHz.

MEETINGS: General Meeting : Last Friday of each month (except December) at 8.00 pm.

Venue: Club Rooms - Ballarat Airport - Unit 31 - Off Learmonth Road - Ballarat.

CONSTRUCTION NIGHTS: Saturday Afternoons at clubrooms. - 1 pm.

HAMVENTION : 28th & 29th. October 2000.

INTERNET HOMEPAGE ADDRESS: www.qsl.net/vk3bml/

PLEASE ADDRESS ALL CORRESPONDENCE to: The Secretary - BARG Inc. Box 1261 Mail Centre Ballarat 3354

NEWSLETTER ARTICLES to Marion Diprose (VK3FJW) 7 Winifrid St. Mitchell Park. Ballarat 3350 .

The Minutes

B.A.R.G. GENERAL MEETING HELD MARCH 31ST 2000



The meeting was opened at 8PM by the president Doug (VK3VBA), welcoming all in attendance.

Apologies: VK3's JEM, YZR, CFH, and HRZ, Stephen Dick (SWL)

Minutes: The minutes of the previous meeting were confirmed as presented in the newsletter, with the following changes: Norm VK3LBA has resigned as newsletter editor and not from the club. The same for Stephen Dick as secretary. Moved VK3VBI, Sec. VK3DCS

Correspondence:

In: Amateur Radio, QST mag. Assorted newsletters from other clubs, council statement, wiltronics statement.

Out: Nil

Treasurer's Report: Account details were tabled and read. Moved VK3AAI, Sec. VK3BNC

Reports:

Amenities: No meeting has been held, so no report

Education: There are class's being held on Thursday evenings at 7:30pm., with two students to date (more welcome)

Technical: An antenna analyser to go with the current one is going to be purchased from the USA. Moved VK3CAZ, Sec. VK3DMK

The 9600bps-packet link to Melbourne is fixed and working. The best times for its use are in the evening/night period's due to propagation conditions. A new radio and antenna system is required for the link, along with the Melbourne end requiring a re-location and realign. Tom VK3DMK put forward a motion to go ahead with the link improvements and the purchase of the radio. Sec VK3CAZ

The club has setup a packet BBS, call sign VK3BML it'll be moved out to the club rooms when the tower that was donated by Jeff VK3PAP is installed and setup.

Hamvention: Tom VK3DMK is still looking for someone to take over as conveyer of the hamvention. Tom is unable to continue in this position and **REQUIRES** some to take over.

Tom has done all the work and layed out an easy to follow step for running the convention.

Nets: The scramble could do with some more interest. How about joining us on a Sunday evening at 7:50pm and giving out a few numbers. Can you get more than eight contacts' in ten minutes? The Thursday evening net on eighty meters has been going along good, but there could be more. VK3BML is going to be active on some Thursday's nets. How about joining in.

General: The annual club junk (in some people's eyes) sale is again being held this year, on the 28th of May. Come along and enjoy the BBQ before the sale.

Anyone going to the Bendigo hamvention on the 30th of April? How about a report about the activity's for the newsletter?

VK3AIQ has donated some books and other items to the club, a letter of thanks has been sent out.

Charlie and Tom are going to be showing one of the local scout troops, the ins and out's of Amateur radio on May the second. Charlie will be operating out at the clubrooms and Tom is going to be at the scout hall, located in learmonth st. The operation is expected to be on two meters, and last aprox.. one hour.

Meeting closed at 8:30pm.

COMING EVENTS



INFORMATION

Friday 28th April
 Saturday 29th April
 Sunday Nights
 Saturday Afternoons
 Thursday Nights
 4th Wednesday
 Friday 26th May
 Sunday 29th May

General Meeting
 Working Bee 1.00pm Club Rooms
 2M Scramble - 7.50pm. 146.425 to 146.600 MHz
 Construction Days - Clubrooms at 1pm
 Club Net 3.610 MHz - 8pm
 WICEN Training nights.
 General Meeting
 George Fowler Memorial Auction and BBQ

WORKING BEE 29th APRIL AT THE CLUB ROOMS

Come along and join the fun in cleaning up around the place. There is lots to do to make our area neat and tidy again. Share a cup of coffee with your friends during this worthwhile time. You never know just what you might find amongst the junk.

MOWING ROSTER.

Volunteers are needed for the next monthly mowing roster. Don't be shy. We need your help.

Gordon Cornell VK3 FGC and Tom George VK3 DMK have "volunteered" for May
 Thanks guys.

For Your Interest**MINI-JOTA**

On Tuesday 2nd May Scouts will gather at the club room and Alfred-ton Scout rooms and with the help of DCS, DMK VBA and CJH will talk to each other on air. Our club in action in the community.

A GREAT NIGHT OUT

The Club get-together counter tea last Friday night at the Royal Oak was once again a pleasant evening with a dozen people in attendance.



Our next get-together will be at **Irish Murphy's**
 6.30pm on Thursday 11th May. Please send names to Betty on 53395317 or e-mail by Tuesday 9th. Thankyou

B.B.Q
SUNDAY 28TH MAY 12 noon
 Please bring a salad to share
 Meat will be provided

followed by
**GEORGE FOWLER
 MEMORIAL AUCTION**

E-MAIL ADDRESS

B.A.R.G would like to compile a list of E-Mail addresses of its members. Would you please ring Marion on 5339 9928 or E-mail your address to diprose@giant.net.au Thank you for your assistance.

FOR SALE

2 Battery Cases for a Yeasu F26
 1 x FBA12
 1 x FNB28
 Please ring David VK3 YNB
 5336 2603 if you are interested

WORD SEARCH

WORLD'S LARGEST ISLANDS

N	I	A	T	I	R	B	T	A	E	R	G	Z	I	Y
C	E	Y	L	O	N	C	H	U	M	H	O	C	R	F
J	I	W	X	O	C	G	S	L	A	P	E	M	E	W
O	V	D	F	E	I	U	V	K	D	L	Y	J	L	Z
D	G	R	N	O	M	N	N	O	A	P	A	S	A	T
A	B	C	H	A	U	A	A	N	G	V	U	G	N	R
B	M	P	T	F	L	N	D	P	A	O	C	O	D	M
T	O	R	T	I	A	N	D	U	S	P	D	W	Y	O
L	A	R	R	D	S	T	E	L	C	I	L	A	C	X
U	H	S	N	O	H	E	U	E	A	Y	H	B	E	H
Z	D	I	M	E	R	Z	B	K	R	N	W	J	H	S
S	M	Q	X	A	O	T	K	E	I	G	D	Y	N	T
Q	J	E	B	N	N	O	A	J	L	V	Q	O	L	U
X	W	N	P	I	H	I	M	Q	F	E	S	F	C	X
W	O	R	N	I	F	F	A	B	U	C	C	A	N	Q

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 Celebes
 Ceylon
 Cuba
 Great Britain
 Greenland
 Hispaniola
 Hokkaido
 Honshu
 Iceland
 Ireland
 Java
 Luzon
 Madagascar
 Mindanao
 Newfoundland
 Sri Lanka
 Sumatra
 Tasmania



THE SMEATON HILL REPEATER.

This repeater is to be relocated to Mount Ben Nevis just as soon as all the arrangements and technical requirements are met. Presently it is operational in Ballarat and members are invited to use it so that any problem that may be present can be ironed out before relocation. Indications are that it is performing well with reports from Maldon, Ararat and Enfield to name a few. Tests with Bill, VK3BSL at Ben Nevis indicate that this will be a very popular repeater and will fill a hole around Ararat and across to Maryborough and beyond. The present callsign VK3RBS and frequency 146.900Mhz, negative offset will be maintained at the moment pending the usual "suck it and see" tests. (Empirical design!).

THE CLUB PACKET BBS.

Software loading and debugging has been carried out by Murray and Doug our "joint system operators"! Jeff, VK3PAP has donated a tower and what's more delivered it to the club to be erected shortly to support the packet antennas. The BBS will operate under the banner of our club callsign and remain on its present frequency.

"BALLARAT AMATEUR RADIO CLUB BBS, VK3BML."

The system will be housed in a steel lockable cabinet/rack also donated. The BBS will run on a borrowed power supply until its own power unit is built and then we should be laughing like big fat spiders! The committee is looking at ways to further encourage members to make use of this means of communication and if you want any help or got any ideas the please lets know and don't all talk at once! Perhaps all the above looks rather mundane and just happens, well the truth is it doesn't. Can I and the club say thanks to all those who have assisted in any way what so ever.

73's Bob VK3BNC.

CHECKING THE FREQUENCY OF OPERATION OF A CRYSTAL

Most crystals do have their frequency stamped/written on them but occasionally you come across one that is not clearly marked.

Although it helps to have a frequency counter to check the value some of us don't have access to one and this might be one way out of the problem if you have an old clock radio which uses a 'getatable' crystal fitted. Such a crystal will have a frequency of 4.194304 MHz (or 2 to the 22nd power). If you now wire the crystal in its place and let the clock run at the speed determined by the crystal for a period of exactly 24 hours and compare the real elapsed time and that shown by the 'dodgy clock' you can calculate the frequency of the crystal.

$\text{CRYSTAL FCY (Hz)} = \text{elapsed time on clock times } 2 \text{ to the } 22\text{nd} \text{ and then divided by the real elapsed time.}$
Clumsy maybe but it can give a very accurate value for the crystal frequency.

EL-CHEAPO AERIAL INSULATORS FOR TEMPORARY AERIALS

If you want a couple of centre or end insulators that don't cost much and are lightweight then try a 'practice golf ball', you know, the sort that are perforated with lots of holes.

I don't suppose they would last too long in high winds or possibly in full sunlight but you never know and it would remove some of them from that game that was once described as 'a good walk ruined'.

SAFETY WITH GUY LINES

If you have guy lines in the yard you always have the risk that somebody will trip over them so try this.

You can buy at hardware suppliers foam rubber insulating sleeves for application over 13mm (half inch in REAL numbers) hot water piping.

I have seen it in silver which shows up well or you can give it a light coat of fluorescent paint from a spray pack but don't use too much as some paints attack the foam.

If you fear to undo the guy then just split the sleeve with a sharp knife and pop it over they guy

Submitted by Reg. VK3 CAZ

JUST A THOUGHT

It's the early bird that gets the worm, but it is the second mouse that gets the cheese!!



GRID DIP OSCILLATOR by SM0VPO

I have had requests to post several projects to QRP@WW one of which is a Grid Dip Oscillator. I have built a valve GDO in the late 60's, but today I use a smaller unit based upon a BC245 Field Effect Transistor. In reality it is a Drain Dip Oscillator. Whilst I was working in Saudi Arabia I built several of these instruments & assisted 14 of my tech's to build their own. In doing so I also learned a few new tricks as the Phillipino technicians in my workshop were very inventive.

Here is the circuit of the unit, which is based upon a Wheatstone bridge circuit; the oscillator being one resistor of the bridge. This technique greatly improves the depth of the dip observed. The battery is a simple "PP3" 9v battery, which will last a year (or more) in this application. For this reason I soldered the battery terminals instead of using battery clips.

The meter is a cheap 100uA unit robbed out of an old stereo radio. The tuning capacitor is also robbed out of the same radio. The radio had VHF FM and MW AM, so the tuning capacitor had 4 capacitors, 2 x 270pf (C2a + C2b) and 2 x 20pf (C2c + C2d). All four capacitors are used in this circuit.

Coils are plug-in type using a 5-pin DIN socket on the GDO unit. The coils are centre-tapped and wound upon coloured plastic formers robbed from those cheap childrens felt-tipped colouring pens. Old credit-card plastic sheet was used to make formers for the larger coils by cutting out a 2cm disk with a 1cm hole for the pen-tube. Three disks are used for each coil. Each coil is connected to the 5-pin DIN plug pins 2, 4 and 5. This selects the smallest tuning capacitors, C2c and C2d. Short together pins 1-4 and 3-5 on the coil plug to select the larger tuning capacitor for the lower frequency bands (above 50 MHz).

COILS

- 150 - 460 MHz = 0 turns 2mm Dia., No centre-tap. Add 470 ohm pins 2-5
- 70 - 200 MHz = 2 turns 2mm Dia., No centre-tap. Add 470 ohm pins 2-5
- 30 - 75 MHz = 5+5 turns 18 SWG single layer close-wound
- 14 - 35 MHz = 9+9 turns 22 SWG single layer close-wound, short 1-4 3-5
- 7 - 20 MHz = 20+20 turns 22 SWG double layer close-wound, short 1-4 3-5
- 3 - 8 MHz = 50+50 turns 28 SWG pile wound using formers, short 1-4 3-5
- 1 - 3.5 MHz = 120+120 turns "thin" pile wound using formers, short 1-4 3-5
- 0.3 - 1.4 MHz = 300+300 turns "thin" pile wound using formers, short 1-4 3-5
- 80 - 310 KHz = 750+750 turns "thin" pile wound using formers, short 1-4 3-5

"Thin" wire I used was robbed from a low voltage relay. I am not sure what gauge it was, but it is "pretty thin" (C:A 40 SWG - ish!!). All coil windings and formers were "tacked" in place with super-glue then "gunged up" with epoxy resin (Arelidite) after testing. Fix formers to the DIN plug using more epoxy. I passed all coil wires down the inside of the formers and poured a little epoxy down the inside to set every-thing solid. The majority of the former was left hollow so that I can stuff coils inside it for VERY close coupling. You may have to "play" with the coils a little to get the correct coverage.

Mount the tuning capacitor about 1cm above centre of an aluminium box, 8cm x 6cm by about 3cm deep. Connect the four tuning capacitors to the DIN socket by means of 2mm Dia copper wire (robbed from a bit of house wiring cable). Connect the DIN socket earth (chassis) pin to the earth tag of the tuning capacitor. Connect both C2's (10n + 1uf) between the DIN socket pin 2 and the earth bar. Mount the components for the FET oscillator in "rat's-nest" fashion as close to the tuning capacitor as possible. All component leads must be clipped as short as possible in order to get performance up to 460 MHz. See above for the layout and front view of the unit.

Here is a picture of one of my original prototypes. This one has travelled around the world and has seen many happy radio sites in the Middle East. The switch inserts a sub-audio tone for opening tone- squelch operated communications equipment at 10.7 MHz and also injects a 1KHz tone so that I could always get a -10dBm signal to line out for setting up radio systems. This way I avoided the need for signal generators and other bulky equipment on site whilst I was working.

GRID DIP OSCILLATOR by SM0VPO (Contd)

CALIBRATION

Several methods; Use a frequency counter, or general coverage receiver or scanning receiver. With a 144MHz receiver you can also find some of the harmonics (eg 72MHz, 48MHz, 36MHz, 28.8 and 24MHz). A Ham-band RX can be used to locate HF frequencies and HF harmonics.

OPERATION

Use the pot to set the meter to (about) mid-scale and position the GDO coil beside the tuned circuit you want to test. "Sweep" the GDO tuning until you see a "dip" and read the frequency from the tuning scale. It can be useful to set the frequency to that which you want, then adjust the tuned circuit under test for a dip. In this way it is possible to align a QRP TX or RX before power is applied.

When space is limited you can take a length of thin enamelled wire and solder the two ends together. Form two loops in the wire and couple one loop to the GDO coil. The other loop may be placed close to the inaccessible tuned circuit. It can for example, be placed round a thin plastic knitting needle or trimming tool.

"PRUNING" ANTENNAS

The unit is shirt-pocket sized so you can use it up the mast. To check a vertical 1/4 wave (for example) disconnect the feeder, and short the antenna with a bit of wire about 5-10cm long. Twist the wire to form a single turn loop and check this loop with the GDO as above. If the ANT is too short the DIP will be higher than the frequency you want.

CUTTING CO-AX BALUNS

If (for example), you wanted a bit of CO-AXIAL cable 1/2 wave long for 145MHz, then cut the cable to "Velocity factor x 150/freq" +5%. Strip and short-circuit both ends of the cable, and form one end into a loop about 1/4" Dia. Apply the GDO coil to the loop and check the resonant frequency. It will be a little low, so cut a bit off the other end and repeat. If the tuning scale is a bit too cramped then you can open-cct the other end and cut the CO-AXIAL cable for 72.5MHz (1/4 wave at 72.5 is a 1/2 wave at 145 MHz).

SIGNAL GENERATOR

A GDO is always a good quick handy device for generating a signal when checking out receivers. I have added a "MOD IN" socket to my GDO which will give 75KHz deviation at 100 MHz from a high output dynamic mic. I also have an internal 1KHz oscillator (so that I could open a receiver squelch at 10.7 MHz and send a -10 dBmO signal to line as an aid to my job as a Service Engineer).

FUN WITH "MOTHERCARE"

Stand outside the shop EXIT and tune the GDO between 80-310 KHz, every time someone leaves the shop. This triggers the "anti-theft alarm". If you are seen, RUN LIKE HELL! (NO - only kidding!!).

Have fun, de HARRY, Upplands Vasby, Sweden.

Note from the Editor:

You are invited/encouraged to submit articles for the next B.A.R.G. Newsletter. All articles need to arrive no later than 15th May You may address your article to:

Marion Diprose
7 Winifred Street
MITCHELL PARK 3355
PHONE 5339 9928
EMAIL diprose@giant.net.au

or

Help me to provide you with an interesting and informative Newsletter.

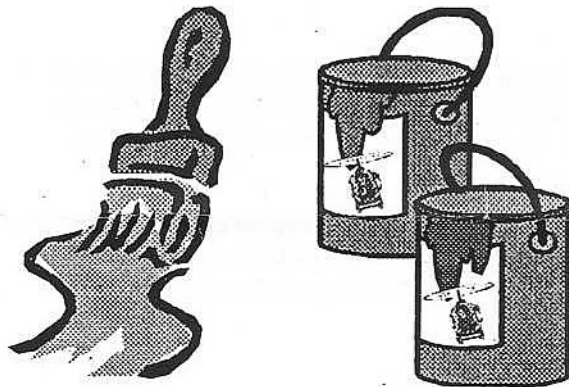
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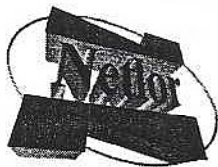
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73 Bill VK3PH



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THANK YOU

We acknowledge the assistance of
The Hon. Michael Ronaldson MP

Federal Member for Ballarat

in the
Printing of this Newsletter.

2004

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2000/04#10

PLEASE NOTE

CUT OFF DATE FOR ARTICLES FOR PUBLICATION IS NOW THE SECOND MONDAY OF EACH MONTH.

B.A.R.G.

The Ballarat Amateur Radio Group Inc.

A group of radio enthusiasts licensed to experiment with local and international radio communications on an amateur basis.

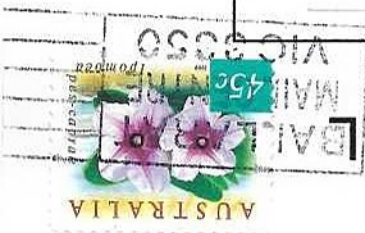
NEW MEMBERS ALWAYS WELCOME.

OFFICIAL NEWSLETTER OF THE BALLARAT AMATEUR RADIO GROUP INC.
Inc.No: 6953T

MR. G. CORNELL VK3FGC
304 WENDOUREE PDE.
BALLARAT VIC 3355

B.A.R.G.
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